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AUTHOR Taylor, Irving A.; Gantz, Benjamin S.

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ABSTRACT

Irving Taylor's paper formulates a theory of creativity which emphasizes the alteration of the environment in accordance with personal patterns of perception. The necessary components are elaborated: (1) an explanatory statement of motivation in creativity; (2) a delineation of the forms creativity can take; (3) an identification and characterization of the creative process: (4) criteria for defining or identifying creativity; and (5) the implications of the theory, in this case, for education. Dr. Gantz's paper deals with the last two of these components. His particular vantage point was the value dilemmas which arise in identifying and developing creative leaders. Primary among these are: [1] how to determine who is chosen; (2) the social outcomes of our choices; (3) placing creative people away from their indigenous groups; (4) personal privacy in assessment procedures: (5) the ethics of training a person in a mode of perception or behavior which could be disastrous in his ordinary situation; (6) which value framework will be used for selecting creative leaders; and (7) the lack of and need for concurrence about man's purpose and goals. (TL)



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A TRANSACTIONAL APPROACH TO CREATIVITY AND ITS IMPLICATIONS FOR EDUCATION¹

Irving A. Taylor

Smith Richardson Foundation

Searching for an explanatory concept for creative behavior has led to many theoretic formulations including self-actualization (Goldstein, 1939; Maslow, 1959), structure of the intellect (Guilford, 1968), regression in the service of the ego (Bellak, 1958), restitution for destructive impulses (Grotjohn, 1957), sublimation (Freud, 1908), and compensation (Adler, 1930). This paper will attempt to formulate a theory of creativity which can be described as transactional in approach and relate the implications to education. Creativity, from this viewpoint, involves a variety of processes and perceptions directed at altering or reorganizing a significant portion of the environment in accordance with one's own personal patterns or structure of needs, hypotheses, judgments, and perceptions, providing the alteration is unique or uncommon and relevant to a problem.

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A theoretic formulation of creativity should include an explanatory concept or a statement of motivation as to why some persons become creative and many more do not, a derived basis for distinguishing the variety of forms or individual differences in creative style, identification and characterization of the creative process, the criterion or criteria for defining or identifying creativity, and, finally, the implications of the theory, in this case for education.

Creative motivation. Why do some persons become creative while others do not? Since important characteristics related to creativity are apparent among children but not adults, the question here is why creativity persists as an important process in the lives of only a few.

Creative motivation is seen here as a form of perceptual transaction in which the environment recomes altered or reorganized in accordance with personal perceptions. As used here, personal perceptions comprise all of the individual's needs, judgments, hypotheses, or perceptually-organizing forces that actively exist within the person.

Transaction is viewed here as one of three levels of behavior or action systems related to the individual and the environment.

On the simplest level, a particular action may be seen as almost



entirely related to and resulting from environmental stimulation at a <u>reaction</u> level, following a simple S-R pattern. If behavior is predominantly developed at this level, it is predictable from the stimulation presented. If the organization of behavior is a function of external stimulations, the person can be described as being highly conforming and lacking creativity attributes.

If the person's inner perceptions interact with the external environment so that the resulting behavior is a function of both, the less predictable resulting behavior can be described as behavior organized at an <u>interaction</u> level, following an S-O-R pattern and involving limited creative behavior.

Independent or unconforming behavior occurs if the source of behavioral initiation stems from the person's inner world of perception and thus unpredictably but creatively alters the environment at a <u>transaction</u> level, following a pattern of O-R-S. These levels of action can be described as behavior (reaction), becoming (interaction), and being (transaction).

Initially it is postulated that there is a discrepancy between the inner world of personal perception and perception of the outer world, the "veridical" environment, especially the social environment. The disparity between the two produces a state of organismic tension which can be reduced in at least one of two ways:



either the person alters his personal perceptions to correspond with the external, social environment; or the person alters or reorganizes the environment congruent with his personal world, which may result in a new organization. The former results in social conformity for the majority largely because of the threat of the social environment. The latter may result in creativity; at least one necessary condition, that of perceptual independence, is fulfilled.

Altering the external environment to correspond with the inner world of perception can be described as a transactional basis for creativity. However, the resulting reorganization, in order to be considered creative, must have the additional qualities of being unique or uncommon, and relevant as a new and workable solution to a problem.

Why are some individuals notivated to reduce the incongruence between personal perception and the external environment in the direction of personal perception? It can be hypothesized that for some persons destroying existing environment organization and replacing it with a new and uniquely developed relevant one provides deeper satisfactions than following existing patterns of recognized and socially acceptable behavior. Also, the person is probably operating on a history of success in personally reshaping the environment.



Formulating creativity as a perceptual transaction system brings more sharply into importance the person's motivation system. What is creative is not the solution so much as the reorganization of the environment in accordance with personal patterns of percep-It explains the creative conceptualizations of Einstein, tions. for example, who reputedly said that his theory reflected the way he saw the universe before he learned to speak. It brings the relationship between the individual and the environment into clearer focus since the attribution of creativity has to take into consideration the person's beliefs, hypotheses, and needs with regard to the environment. Most important, it poses the person in the Leibnitzean tradition as having his own maps, dispositions, and perceptions rather than as an empty box, creating serendipitously and being manipulated in any direction. It is necessary to assess the personcreating-in-the-environment rather than assessing either the creative person or the environment conducive to creativity. From this, also, can be derived more defined forms of creativity, creative processes, and criteria for identifying creative behavior.

Forms of creativity. Altering the environment to conform to personal perceptions may result in minimal or maximal changes in the environment. In the former, emphasis is on expressive acts, and in the latter a significant conceptualization of the environment



6

is involved. The forms in between may vary not only in degree of environmental change but also in kind. Since the term creativity covers a wide spectrum of behaviors (Taylor, 1959, 1962), it is necessary to distinguish clearly its various meanings. Creative individuals express their creativity in different ways:

The most fundamental form of creative behavior can be described as expressive spontaneity since the behavior is free from prior formal training and is manifestly unrehearsed. The behavior involved is suggestive of improvisation, and the behavior itself is considered creative, e.g., the spontaneous speech of a leader. Freedom to create without training may result in products that are creative when the person in question has a great deal of talent. From a transactional point of view, little of the environment is changed unless the new product or expression is imitated widely and displaces others.

When the spontaneous acts of children or adults are polished through training or education, the natural behavior may become inhibited, but the finished products can be described as a result of productive skill. Craftsmanship by strictly adhering to external rules of production can take on the character of conformity unless the skills are tempered or transacted by individuality.

Describing the works of craftsmen as creative has been confusing.



When a person exceeds mere skill and can manipulate concrete elements in the environment inventively by discovering and combining environmental parts to solve problems, the form of creativity involved can be described as <u>inventive ingenuity</u>. Resourcefully combining tangible elements relevantly and uniquely to sclve old problems or transactionally discovering new relationships is the province of the inventor or discoverer, involving a significant increase in environmental transformation.

Dealing with abstract ideas which do not result in a concrete product is the province of higher forms of creativity involving ideational flexibility and a greater degree of originality, resulting in very significant transformations of the environment. One of these forms can be described as <u>innovative flexibility</u>, involving relevant and unique variations, modifications, and adaptations of a unique idea into an independent creative outcome. The great followers modifying the ideas of the most original creators are innovatively flexible. They have the genius to adapt important notions to specific areas and have a talent for application.

The most original ideas from which innovators derive their creations are maximally abstract and unapplied and can be characterized as emergentive originality. An original idea is most difficult to create since it derives most fully from the transactions of personal perception. In general, the emergentively



original person creates an entirely new way of perceiving a significantly large portion of the environment.

The creative process. What is the nature of the creative process? Even though creativity may be manifest in various forms, is there an underlying pattern? A process can be deduced from a transactional approach which is somewhat similar to Wallas' (1926) early description of the creative process which writers have either accepted, rejected, or modified.

Transaction involves an environment from which inputs are received, a period of assimilation, a transformation or transaction of the environmental inputs, expression of the transformation, and, finally, a form or product which embodies the resulting transaction. From this viewpoint, the creative process originates with environmental perception which is assimilated, reformulated, and expressed into a new communication or product. The crux is the reformulation at which point perceptual transaction occurs. It is postulated that the input scope is significantly related to the size of the output, i.e., the amount of information accepted freely, with openness, is related to the scope of the creative production.

The initial phase can be described as <u>exposure</u>, a period in which the environment is perceived, similar to Rogers' openness (1954), which initiates the process. Sensory stimulation toward a



point of saturation would be one way of producing psychological openness and initiating the creative process (Taylor, 1969).

This is followed by <u>implosion</u>, where the inputs are convergently directed inward at a relatively rapid rate toward a central reformulation. During this phase, the person may no longer be open to environmental perceptions since the assimilation may require the greater psychological portion of the person's capabilities.

A moment of <u>transformation</u> follows where insight or perceptual transaction occurs. This phase in which perceptions of the external world are reformulated is at the very heart of perceptual transaction and is creative to the extent that the reorganization of the environment is congruent with personal perceptions.

Prior to the articulation of the finished product, the new transactional perception is subject to modifications and additional personal organization, or a phase of <u>explosion</u> involving expression, release, formulation, development, and fluency.

Finally, <u>production</u>, related to communication, implementation, and actualization, terminates the process with the creation of something new. This period of composition generally involves tension and may require painstaking work.

The same processes may be involved in various forms of creativity but with various parts emphasized. For example, expressive spontaneity emphasizes the explosive and productive phases



but not so much exposive, implosive, or transformative; while emergentive originality may emphasize to a larger extent the exposure or openness phase. However, certain processes may be involved in all creativity, e.g., psychological openness, divergent thinking ability, field-ground reversal facility, and inner orientation (Taylor, 1969).

Criteria of creativity. The preceding discursion raises the important question of criteria of creativity. Criteria which have been used include statistical definitions involving deviations on tests; number of citations or number of lines devoted to "famous people" in the literature; judgments of professionally qualified people; generally acknowledged eminence; number of products defined as creative; pursuit of activities assumed to require creative talent; peer ratings; supervisor ratings; promotion rate; number of patents; number of publications, etc. ...natever criteria are used—count, ratings, or judgments—are related to the product, process, personality, immediate environment, or the society or culture from which the creative person emerges, all of which are involved in a transactional approach.

Emphasizing the <u>product</u> as criteria, or more specifically the attributes of the product, may include complexity, asymmetry, uncommonness, frequency, relevancy, relatedness, uniqueness, novelty, originality integration, alteration, flexibility, etc. Assessing creativity through product attribution alone may have the inherent



drawback of judging creative newness by previously determined criteria, or assessing at a time when the product may not be deemed creative. The view here is that transactional production, or changing the materials into a product that is congruent with one's personal perceptions in a unique way and relevant to the problem, can be useful as a satisfactory criterion for assessment when used in conjunction with other criteria.

Process criteria may include remote associations, selfactualization, adaptiveness to problem solving, etc. The fundamental problem is that of fruitfully defining the process so that
criteria can be derived. From a transactional approach, the process
criteria would involve openness and changing the environment in
accordance with inner perception. The benefit of using process
criteria is that one need not wait for production to occur in order
to assess creativity but determine only if the person behaves in
accordance with the creative process.

Assessing creativity through <u>personality</u> may include such criteria as independence, receptivity, self-assertiveness and dominance, and rejection of impulse suppression, and has the advantage of dealing with the whole person of which the process is part. It is assumed that creative personalities have discernible styles even when not creating and therefore can be assessed independent of process or product identification (Barron & Welsh, 1952).



A transactional personality would be one that has clearly organized personal perceptions and is capable of changing the environment accordingly.

The immediate <u>environment</u>, for which it is difficult to identify assessment criteria, contains generalizable characteristics that facilitate or produce creativity. These inducements may include, reduction of frustration, elimination of win-lose competition, provision of support, encouragement of divergence, maintenance of an open environmental structure, minimization of coercion, minimization of enforcement of behavior norms, free communication, allowance for and exposure to risk-taking, competent group leadership, and sensory stimulation as previously described. From the viewpoint of perceptual transaction, most important is an environment which permits self-oriented alterations.

Less frequently examined in relation to creativity are broad social or <u>cultural</u> criteria (Stein, 1953). Historically, there have been several creative cultural explosions—the Greek civilization, the Renaissance, and the present period. In a previous paper (Taylor, 1962), the writer attempted to describe the underlying structure of these cultures in terms of congruent or prevailing forms of creativity. In the Greek civilization, singular and idealistic answers as to ultimate value or reduction of matter were considered creative, as in the concept of justice or the reduction



of the universe to atoms. During the Renaissance, the opposition of two points and realism were apparent as in force--counter-force and in Descartes' mind-body dualism.

The present Western culture seems to emphasize creativity as a symbolic synthesis of two opposing forces: Darwin's evolution resolving the too many organisms and too little food conflict;

Marx's classless society resolution of the opposing forces of the proletariat and the bourgeoisie; Freud's resolution of the id and the superego by the ego; and Einstein's resolving time-space observations into relativity. The cultural criteria--product, process, personality, and environment--would appear to be a synthesis of different values into a transactional change by relating forces in accordance with personal perceptions.

Implications for Education

The implications for education are that the curricula and school environment be so developed as to enable each person to reorganize a significant portion of his environment compatible with the school system. It is important to provide flexible materials on a tutorial or individual basis which allow for individual differences in pacing. Recognizing each student from a Leibnitzean point of view rather than a Lockean is suggested, i.e., perceiving each student as capable of actualizing his potential,



which requires only ignition in a free environment, rather than as an empty box needing to be filled by instruction. Finally, it is important to recognize and encourage new and unique expressions.

In terms of forms of creativity, it is important to provide suitable materials for each type of creative student. Those who are productively skillful in disposition will profit more from instruction and recommended techniques than those spontaneously expressive who will profit from an opportunity to practice and express without restrictions. Those few who show emergentive originality would profit more from being allowed or encouraged to deal with the broadest spectrum of problems. Career guidance and fields of endeavor should be selected in accordance with the various creative levels.

The most direct implication for education in terms of the creative process is to present materials in a manner which conforms to the process. Presentation of materials that have the quality of intensive stimulation will lead to greater openness, assimilation, transformation, expression, and production. It is suggested that if a person shows transactional ability, he will be more open to the environment in terms of quantity of information consumed, as in cognitive complexity. If there is a lack of transactional ability, however, an environment to induce creativity is needed and can be instituted by sensory stimulation.

Without developing creative criteria, in all relevant areas, the important possibility for identifying the potentially creative for our educational system is precluded. If creativity is considered one of the more important values of education, then a creative environment is necessary for creativity to emerge.



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Value Dilemmas in the Assessment and Development of Creative Leaders

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Benjamin S. Gantz, Ph.D. Smith Richardson Foundation, Inc. Greensboro, North Carolina 27402

I can see and accept several compelling reasons for trying to identify potential creative leaders very early in life in order that their optimal development may be planned and provided. First, it seems that current attempts to solve many critical social problems are not working. This would suggest a need for much more creative solutions than we are now getting, which in turn points to a need to identify creative persons for leadership roles, to train these, and to provide leadership opportunities for Secondly, the influence process by which ideas are translated into action is growing more complex daily because of the increasing size of institutions. Here one could compare the problems of administering a New England town with the problems of governing a metropolis such as New York or Chicago. More advanced skills in leadership and a deeper understanding of the leadership process are badly needed.

Also, in science, if the work of Lehman is to be believed, men seem to be more creative very early in their careers. Creative mathmeticians, for example, achieve their peak in their early twenties. Early identification and special development of persons promising high creative potential therefore has considerable attraction. But, in this process of identifying and - in essence -



creating a clearly elite group, I see a number of value dilemmas.

I begin my discussion of the value dilemmas which I see as implicit in the early identification and development of creative leadership, within the following framework:

- (1) For the moment I accept, or more accurately, I avoid the question of the basic values of modern western society, in so far as I understand these values.
- (2) I accept, or again I avoid the question of whether increasing the innovative impact on a society already reeling under such impacts is good or bad.
- (3) Most important, perhaps I am side stepping any attempt to define the question of what <u>is</u> good as regards human beings, affirming what most of the social scientists vaguely affirm, namely, that growth and development or self actualization of the individual is good. There are a host of assumptions here, however, which seem to me to go unexamined.

I will pass these questions by for the moment in the presentation of this paper. But at its close I will cite an interesting piece of work which makes a case for a very different point of view and one which undertakes to deal with these issues.

Even within this general acceptance of modern technological society as is, I find many dilemmas which trouble me in our program of identifying and developing creative leaders. These, we define



as persons who will have an innovative and impactful effect on organized human endeavor.

I

The first involves the purely technical question of how do we determine who shall be chosen and how do we know that our choices are correct? As anyone who has worked in the area of creativity will agree, the very definition of the creative person is unclear and the identification of such persons is difficult unless we choose to define creative in an essentially trivial manner such as the ability to give uncommon uses for a brick or to emit statistically uncommon word associations or to display high fluencey in verbal or ideational tests. For example, it is fairly easy and I think fairly satisfactory to define a creative act as one which is uncommon in a given population, which is somehow useful, or relevant, or right, and which affects organized human endeavor. While it is easy to recognize an uncommon response or act, it is often difficult to evaluate its appropriateness or rightness in a broad social sense. Here we drift ever closer to the question of ethics which forms the last part of my discussion. Now, clearly can there be an innovative and impactful work done by an advertising agency which is deceitful and deleterious to the well being of consumer groups and the larger society. an act creative?



On a still simpler level, whether we do our selection by tests or by situational exercises such as simulations, games, or by observations of a person's behavior in a leaderless group, how do we know that our observations or test items are accurately predictive of a creative leader at the height of his mature powers? I will not use the tired cliche "more research is needed." But, it is difficult not to feel that our trust in present predictors meets St. Paul's definition of faith as being "the substance of things hoped for, the evidence of things not seen" better than it meets the tenets of science.

This ethical problem of not really knowing that we can predict and yet going ahead and predicting anyhow, seems serious for this reason. Here as elsewhere, I believe the self fulfilling prophesy operates. People made highly visible by early selection and rich development programs are clearly advantaged. Programs such as our Foundation has followed in the past and will follow in the future, almost garantee the attainment of some form of leadership. But, whether the best <u>real</u> leaders have been chosen and whether a disservice has been done to persons with characteristics too subtle to recognize, remains unknown.

II

Next, I think there is no question that we can assess and predict persons who will be impactful and effective within a



given subculture such as a telephone company or in the large research laboratory which I worked with in California. this may be less of a prediction than of simply achieving good realiability between two predictors and not having a criterion at all. For example, the New York Telephone Assessment Center, which is staffed by employed executives of the company who are given a year's leave from their regular jobs, indeed selects very well those who will succeed with the company. However, success is here predicted by the same type executive who later makes the assessee's performance evaluations and promotion decisions. The value problem here is that assessment procedures, which I assume are devised to select creative leaders who will change things for the better may be a powerful means of simply maintaining the status quo whether it be good or bad. This is so because the process selects those who will please present incumbents of senior positions, thereby selecting quite similar future incumbents of these positions.

In this connection, I would cite biographical inventories as posing a peculiar ethical and value problem. They will indeed predict who will later be evaluated as creative and become leaders. But, consider the implications of some of the items, such as, the "number of years of education of one's father;" "estimated cost of one's home;" number of books in the home;" etc. Clearly a person with more educated and affluent parentage is very likely to be



favorably advantaged by special educational opportunities and by fortunate placement through social connections, than the children of the poor, even if equally able.

III

This next is a controversial point and yet I think it merits careful thought. It concerns the ethical and value question of skimming off the cream of any group to the enrichment of the persons so skimmed off and to the enrichment of the group they enter, but to the impoverishment of the group from which they We like to think that our culture is caste free. think it is. Curiously, many groups might be better off if we had a strict caste system. This is because, if a person cannot escape his social class by upward mobility, each caste is likely to contain within its population a broad spectrum of normally distributed attributes, including creativity and leadership ability. But, if the most creative and able are selected out to join some remote elite, the best qualified men to meet particular needs of the group - the top of the ability distribution - are irretrievably There may be no really good leaders left them. examples occur in high school when bright persons are siphoned off for college preparatory courses and less gifted into vocationaltechnical education and a future in a trade. This thought is not original, but I regret that I cannot remember the person who made

a half tongue-in-cheek, half serious case for maintaining a caste system to avoid the problem I pose.

IV

Another value question that plagues organizations has to do with what aspects of a person are personal and private. For example, when a corporation junior executive is assessed and a large amount of data created and analyzed, who has the right to view the information? One prominent consultant takes the position that if a person's superiors are nct going to be apprised of his strengths, people will not even show up to be assessed. (He does not discuss their weaknessess with their superiors). Another, and contrary, position here is that even if only the strengths are communicated to a superior, the weaknesses will be evident by their very ommission. Within this framework, one ethical position would seem to be to apprise only the assessee and let him plan his career taking into account the assessment results, both strengths and weaknesses.

V

Another question seems to me to concern the ethics of training a man in a mode of perception or behavior which may cause him anything from inconvenience to disaster when he returns to the institutional life as it actually exists. The classic



case is, developing a person's skill in interpersonal openness and trust by an extended T group and returning him to a mildly paranoid organization where he will hang himself. But, openness and trust are not the only ways of being a misfit in some organizations. Real creativity, if such can be developed by training, is much more unsettling and much less welcome than we would like to think. For example, even in a research laboratory devoted to innovation, it is estimated that 85% of the creative output emerges from less than 15% of the research staff. does not mean that the other persons are not making major contributions in terms of competence, engineering management and in other areas that make the creative output of the 15% possible and assimilable into the system. Some of the 85% of good wheelhorses might be less valuable and less valued if they suddenly became creative.

VI

Another value question is, within what broad conceptual and value framework will creative leadership be selected? For example, in our program selection possibly will be by social scientists.

I am sure that a group of police officers trained in assessment would select quite a different group of potential creative leaders as would a group of assessors recruited from the ranks of artists, even if each group was asked to select creative leaders for society



in general. The different value positions of these three hypothetical groups of assessors would have dramatically different consequences in terms of outcome. This leads to my final and most difficult value problem because I do not see any hard evidence that the values and biases of social scientists are any better than those of many other groups in western society.

VII

This last dilemma is much more serious, as I see it, than any of the preceeding. The question is not academic anymore because we as social scientists are like the atomic scientists in 1940. We now have some of the means and probably at least the rudimentary skills, needed to change the face of the earth. This brings us face to face with really determining what our value positions are and which consequences of our actions we are willing to accept responsibility for. The core problem here, as I see it, is in a massive gulf between men vis a vis the ultimate metaphysical questions of man's purpose and goals. Richard Weaver in the book Ideas Have Consequences describes what he feels to be the "dissolution of the West." It is a chilling indictment of much in our culture that we take for granted and I am sorry that I cannot do the scope of his thought justice. He makes a convincing case that we are increasingly skilled in the means of achievement and increasingly unclear about what we are trying to achieve.



also find his argument convincing that what we call progressive may be a regression to nihilism; that sentimental humanitarianism is no substitute for rigor in defining the good and working toward its achievement. I am troubled in this connection that we even eschew the use of the word "good" in our definition of a creative leader who is seen only as being innovative and impactful. Also, we take much thought for intelligence and creativity but little for wisdom and we assume charity as implicit in self knowledge. It may be, but I think the case is far from proven that self development using the techniques we propose results in the development of a better man, although, I agree that by their use we can develop a more powerful and impactful one.

With Weaver, I believe that we have moved toward a loss of center, a loss of universals and transcendental values upon which rational man can agree. I see a great need for a set of metaphysical yardsticks against which our values can be validated and our priorities ordered. I certainly do not see logical positivism humanism or utilitarianism as providing this yardstick. I personally do not know where to turn for a set of ordering principles that modern western man can now agree on. Yet some such consensus seems essential if we are even to survive. It seems to me that a concept of leadership somewhat like Plato's philosophical doctor, a person who is rounded and whole would be the truly creative leader. And possibly a very creative act of leadership would



be to achieve a return to a society uncommonly like the Middle Ages and very far removed from western democratic society.

With Weaver, I take the position that we have the kind of society we have as a consequence of choice. Our problems are the result of bad choices which in turn stem from faulty values.

Defining or even discussing "good" or "bad" always causes some sort of reflexive block in psychologists. But the issue has to be faced. Some leadership actions are clearly exploitative and, by almost any standards, are evil. If psychologists are to move beyond the goal of understanding and predicting behavior to actual intervention and control, a definite moral concensus of good and evil transcendental values must be reached. Perhaps moving us toward its achievement is the most urgently needed act of creative leadership of our time.

